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THE CROSS-CULTURAL STUDY OF SEMANTIC STRUCTURE. FINAL REPORT.

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SEVERAL EXPLORATIONS WERE MADE INTO THE STRUCTURE OF MEANING IN BURMESE AND RUSSIAN. VARIOUS KINDS OF LINGUISTIC INFORMATION WERE ISOLATED BY TEXTUAL STUDY AND INTERVIEWS WITH NATIVE SPEAKERS. DISCUSSION COVERED SUCH THEORETICAL QUESTIONS AS (1) SYNCHRONY AND DIACHRONY, (2) SEMANTICS AND GRAMMAR, (3) SEMANTICS AND SOCIAL STRUCTURE, (4) SEMANTICS AND COGNITION, (5) COGNITION AND AFFECT (DENOTATION AND CONNOTATION), (6) FORMS ALTERNATIVE ANALYSES, (7) RELATIVE PRODUCT ANALYSIS, (8) DISCOVERY PROCEDURES, AND (9) APPLICABILITY TO AREAS OTHER THAN KINSHIP. THE AUTHORS CRITICIZED EACH OTHER'S PAPERS FROM CONTRASTING IF COMPLEMENTARY POINTS OF VIEW. ONE WORK WAS CONSISTENTLY CONCERNED WITH DETAILS OF RUSSIAN LIFE, WHILE THE OTHER WAS MORE TOWARD LOGICAL AND FORMAL PROBLEMS. (RS)

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Final Report

Principle Investigators

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ROBBINS BURLING

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I. Introduction

1. Background. During the last ten years, a number of linguists and anthropologists have become increasingly interested in the formal study of semantic systems. Linguists had already developed refined techniques for the investigation and presentation of grammatical data, but their theories had usually dismissed the study of meaning as at best irrelevant and, at worst, as seriously interferring with the clear understanding of grammar. This dismissal no doubt facilitated rapid advances in linguistic theory and, more particularly, the production of elegant if austere descriptions of the grammatical code.

Nevertheless, those who must deal with languages in a practical way can hardly avoid a concern with meaning; anthropologists in their field work, for instance, are apt to be confronted with difficult semantic problems when they cope with languages very different in structure from their own. Yet it is obvious that native speakers of these languages learn not only their grammar but also the meaning which the various terms and combinations of terms of their language carry. If one looks upon the many existing descriptive and formal grammars as constituting theoretical models of the way speakers construct their natural utterances, then in principle, it also seems reasonable to attempt to construct some model of the way they handle meaning.

2. Assumptions of Structural Semantics. Considerations such as these have led a number of anthropologists to investigate sets of words, phrases or utterances from natural languages and to construct formal statements which, in a relatively abstract and general manner, account for the selection among these units in actual messages. The minimum requirement for such an analysis is that it must predict the appropriate term to use under specified conditions. Such analyses are "linguistic," in the first instance, simply because they start with sets of meaningful forms in some language and tell one how to use them correctly. This is similar to the motivation for lexicography with the qualification that conventional lexicography very inadequately specifies factors of content, emotive function, stylistic level, and the like. The students of ethnographic semantics, however, have also assumed that terms often fall into sets defined by at least one diagnostic dimension or by a concatenation of diagnostic dimensions. In some cases, the meaningful units need not be treated in sets--as when one focuses on a single word such as "honor"--but their usage is predicted by a matrix of interacting social or psychological dimensions. To the extent that such assumptions are made about sets and dimensions, and to the extent that they lead to the construction of formal accounts of usage, it seems fair to consider all such analyses as "structural."

3. Plan of Research. Feeling that the techniques which had been suggested and applied in semantics held great promise for both ethnographic and linguistic theory, the principal investigators

decided to launch several explorations into the structure of meaning in two languages with which they already had had some personal experience--Burmese (Burling) and Russian (Friedrich). Linguistic information of various kinds was then isolated through textual study and through interviews with native speakers. Several semantic domains were investigated, and analyses of a number of these have already appeared as journal articles, while others are now in press, or still under preparation. In the course of the empirical and historical analysis, however, a number of theoretical questions were thrown into relief, and were discussed at some length by the investigators. The general issues are considered in Section II below, while Section III briefly summarizes the studies which have been completed or initiated.

II. Theoretical Considerations

1. Synchrony and Diachrony. Since its recent emergence as an active field of investigation, empirical, ethnographically-oriented semantics has to an overwhelming extent been carried out on systems more or less personally known to the investigator through his own field work or through months or years of residence in areas where the language is spoken; all of Burling's statements, for example, reflect his first-hand familiarity with the culture of Garo tribesmen and of the modern Burmese. Structural semantics to date has been largely limited to contemporary materials treated as synchronic systems, with little attention to their historical origins and no attempt to predict their future development. While such a methodological limitation is not inherently faulty so long as it is

recognized to be provisional, over a longer period it could lead to two omissions: first, a large number of extinct but well documented systems are only accessible through historical research; second, the descriptions of semantic change (merger, etc.), that will have to be included within any truly general theory of semantics can be documented only by including historical materials. All of Friedrich's articles are historical and they are diachronic to some extent, although the paper on Russian kinship focuses on the synchronic set of the mid-nineteenth century, and "Structural Implications of Russian Pronominal Usage" is limited to nineteenth century evidence. Two other papers on the evolution of Russian kinship deal with the semantic shifts from Proto-Indo-European (about 3000 B.C.) through three other stages to Modern Soviet Russian.

2. Semantics and Grammar. Even today, some linguists insist on maintaining the fruitless stance of Bloomfield that meaning should be relegated to "the natural and social sciences." No doubt, part of the rigor which linguists have attained in the treatment of phonological and grammatical systems can be attributed to their willingness to consciously and explicitly ignore meaning. Ultimately, however, any full theory of language must incorporate a consideration of meaning. Units of meaning must be treated, both from an external standpoint, and in terms of their formal and distributional relations to each other. In developing such a linguistic theory a major problem will be to determine the precise interrelations and interdependencies between

semantic patterning and the purely grammatical (syntagmatic and paradigmatic) relations between lexemes that we think of as "syntax." The relevance of syntax becomes obvious when ethnographic semantics turns from sets of words or terms to the treatment of constructions and their interrelationships. And, since meaning has been less well analyzed than grammar, any investigation of the former at the present time is bound to be influenced by our theoretical predispositions about the latter.

Unfortunately, the disentanglement of semantics and syntax has long eluded linguists, but considerable research today is devoted to precisely this problem (e.g., Weinreich, Chomsky, Lamb, Katz and Fedor). In attempting to control the syntactic variables more explicity, Burling did considerable work on reorganizing a published grammar of Burmese in terms of an analytical model--that of transformational grammar--that promised a valid and novel basis for his semantic studies. He also has prepared a preliminary paper ("Semantic Prerequisites to Morphemic Analysis") which suggest certain ways in which syntactic analysis may to a limited extent depend upon meaning, although the dependency is usually assumed to run entirely in the opposite direction.

3. Semantics and Social Structure. In the present course of ethnographic semantics there is one area of wide consensus: most of those concerned feel that the analysis must specify the basic discriminations made by the speaker when using his language--the components distinguishing "high" and "low," "male"

and "female," and so forth. In fact, to speakers of a language there is considerable agreement as to such basic meanings of words and idioms, and it is the job of the linguist-ethnographer to tease out the meanings and state them explicitly. At another point, empirical semantics bifurcates into two quite distinct streams of thought. Perhaps a majority of students are primarily devoted to constructing models (trees, matrices, hierarchies, graphs) that will be increasingly superior in terms of criteria such as elegance, parsimony, minimal redundancy, and so forth. Several of Burling's papers (e.g., "Garo Kinship Terms") are directly or indirectly concerned with these essentially mathematical or logical problems. More extreme examples of this preoccupation with formalizing is the recent article by Floyd Lounsbury on "Crow and Omaha-Type Kinship Terminologies."

The second stream of semantic studies has been directed toward demonstrating interrelationships between an essentially psychological set of culturally specific discriminations and an essentially sociological but also culturally specific set of behavior patterns, attitudes, patterns of sentiment, and so forth. Taking off from a reasonably adequate set of inferred discriminations, one attempts to build a theory of their interrelationships to more or less coordinate patterns underlying the behavior and the verbalizations. One justification of this second approach is that, unlike the mathematical one, it is directly aimed at relating the results of linguistic-semantic analysis to the results of social structural analysis. Both of Friedrich's long papers on

kinship and pronominal usage exemplify this type of social psychological semantics. One of the more rewarding features of the research has in fact been the interaction between Burling's primary excitement about logical and formal problems, as against Friedrich's preoccupation with relating the semantic structure to the patterns in a rich body of sociological evidence.

4. Semantics and Cognition. Anthropologists using formal techniques for the study of meaning have had at least two contrasting motivations. The first and more modest one has been to specify the conditions under which any meaningful form, from a sentence to a morph, is uttered and understood; in other words, what does one have to know in order correctly to relate the words in a language to the units in some other system of the culture? Analysts have searched for sets of rules that would unambiguously account for the usage in some domain, and one test for the validity of an analysis has been the accuracy with which it predicts such "naming." Burling framed a somewhat extended defense of this position in an article published in the American Anthropologist, "Cognition and Componential Analysis: God's Truth or Hokus-Pokus," arguing that the cognitive reality of any analysis is ultimately unknowable, and for that reason irrelevant.

A second type of motivation leads us to the more ambitious objective of inferring the criteria by which the natives themselves are presumed to relate their language to their non-linguistic experience. Rather than establishing a system of correlations between "words and things," the analyst seeks to build an essentially

psychological theory of the interrelations between the set of meaningful forms and the set of ideas and emotions purportedly in the mind of a normal individual. This view, suggested by a number of scholars such as Whorf and Wallace, has generally been couched in terms of cognition and, at least in principle, can be related to psychological theories of cognition. Friedrich's articles on pronominal usage stem from this second motivation.

5. Cognition and Affect; Denotation and Connotation. Partly because of the "materialistic" postulates of Bloomfieldian linguistics, partly because of more insidious prepossessions as to "rigor," recent semantic studies have displayed a strong tendency to limit the field to the minimal denotation of the meaningful forms, and preferably to such domains as could be defined in terms of an external and concrete reality such as color, kin types, number, time, geography, and the like. A second type of approach is semantics, exemplified in some of Friedrich's studies, plays down the differentiation of words in terms of their relation to "external" realities and emphasizes the complementary assumption that their meaning is primarily a product of their collocation with other words and idioms in a variety of contexts. By somewhat similar reasoning, Friedrich has not differentiated sharply between "denotation" and "connotation," a medieval, scholastic dichotomy leads to an imposition of the analysts' point of view, as against dealing with networks of units linked to each other by mean-

ings of various kinds and differing power.

Along the same line, Friedrich has assumed that the speakers of a natural language symbolize their emotions and sentiments with the same complexity and accuracy as the references in their various ethnosciences. It is fallacious to draw a sharp line between problems of cognition and of affect and, even worse, to exclude the latter from consideration, as is the case, de facto, in many quarters today. Friedrich's paper on pronouns treats at some depth the symbolism of emotional states, with the objective of fruitfully combining the "rigor" of structural linguistics and ethnography with inferences about affective patterns that are too often relegated to psychology or "the humanities." Put in somewhat more general terms, it is concluded that the rigor and elegance of an analysis should not be confused with its content; the symbolism of hate can be analyzed as rigorously as can the denotations of a "folk zoology." The symbolism and the structure of sentiment is as legitimate and interesting a field of semantic inquiry as the symbolism and structure of knowledge.

6. Alternative Analyses. Related--but by no means identical--to the problem of the cognitive (or affective) status of analyses is that of alternative analyses. The underlying meanings of the same set of forms may frequently be analyzed in more than one way. The whole question has been discussed at length by Wallace and Goodenough, and examples of such alternatives are given in two papers by Burling.

A number of techniques have been suggested or explored

for eliminating or at least reducing these alternatives. For example, all investigators would agree that, other things being equal, the more elegant or parsimonious solution is preferable. This criterion, though unexceptionable in principle, is often indecisive in concrete cases because an increase in simplicity at one level is often balanced by a decrease within some other subsystem. And mechanical rules--such as those involving the counted number of symbols in a denotation--are patently silly. A second means of deciding between alternative solutions would be to relate them to a wider selection of data than that which was included in the original analysis; the analysis of kinship terminology can be so tied to the analysis of class and caste. This both limits the arbitrariness, or purely mathematical character of a given solution, and may lead to valuable inferences about the covariation between different sets and institutions. "The non-uniqueness of solutions" may also be reduced by the administration of psychological tests. But it may be that none of these techniques will suffice to reduce all the alternatives to a single "correct" one.

Investigators differ considerably in the seriousness with which they view this problem, some feeling that most of the supposed "alternatives" are only trivially different, or that all alternatives are about on a par if they are of approximately equal elegance and are mutually convertible. Other investigators are preoccupied with "non-uniqueness," and feel, in particular, that if two good analyses can be produced they probably reflect

significant individual or subcultural or subsystemic differences in cognition.

7. Relative Product Analysis. It may be reasonably postulated that every meaningful form has some fundamental referent, a relation to some "non-linguistic" context, whether that context is a material reality or some culturally specific concept. A child, for instance, learns the meaning of "hot" partly through the physical experience of a hotplate, of hot weather, and the like, and the most fundamental referent of "mother" grows out of his actual experiences with a particular person. A considerable number of words and idioms are learned in this way.

The most widely used technique in formal semantics has been "componential analysis," whereby the fundamental meanings of a domain are apportioned on the basis of cross-cutting dimensions into subdomains of ever decreasing membership; in the case of kinship terminologies, it has proven possible to sort large numbers of terms into paradigms, with each unit defined along several dimensions; thus "brother" contrasts with "sister" along the dimension of "sex of speaker," and so forth. By another, related technique the terms in a domain can be organized into taxonomies of noncontrasting and differentially inclusive dimensions or "levels"; thus, "oak" includes both "red oak" and "white oak." Taxonomic dimensions do not cross-cut, but divide and subdivide the domain into components of ever smaller scope. Such taxonomies have been particularly useful in sorting out the data of ethnoscience, such as the terminology for botany and disease. Both

"folk taxonomy" and "componential analysis" deal with systems that are assumed to be static, and the techniques yield discrete definitions of terms by means of distinctive attributes.

A second technique assumes that the units in a system can be generated through various processes, which depend upon the combining of previously defined terms with each other to produce meanings for new lexemes and extended meanings for old lexemes. Kinship terms, for instance, may be defined by relative products, so that "uncle" can be defined as "parent's brother." This process is paralleled by the practice of lexicography in which one word is defined in terms of others, and the technique also rests on the premise, mentioned above, that the meaning of words is purely collocational or a product of their pattern of combination. Two of Burling's papers make use of relative products in defining certain terms, and each considers in some detail the implications of such an analysis.

8. Discovery Procedures. A large proportion of the work previously published in structural semantics has been concerned with formulating explicit procedures by which such analysis should be conducted, although this has in some cases (Goodenough) been coupled with presentations of the results of completed analyses. By contrast, most of our work has been directed toward the presentation of full systems; the paper on Russian kinship, for example, does not discuss discovery procedures at all, but simply states the evidence and inferences for the over-all semantic structure and demonstrates how the latter was related to social

structure. This is in line with a theoretical position, recently taken by certain linguists. Structural linguists had traditionally expended great effort on refining techniques for the discovery of grammatical regularities but, following Chomsky, a young and vigorous school has been arguing that the means of discovery are irrelevant so long as the data is adequately accounted for in the final formulation of rules.

9. Applicability to Areas Other than Kinship. Up to now, the greatest number of well-presented systems have dealt with kinship, though chromatic terminologies have been satisfactorily treated. Many workers have assumed that techniques comparable to componential analysis or analyses by means of taxonomic hierarchies would be applicable to other semantic domains, and considerable effort has been expended on pushing essentially the same sort of analyses into other areas. One of the explicit aims of this project was to push semantic analysis into areas other than kinship and folk science, both through treating different materials, and through using complementary or overlapping analytical operations and basing analyses on fundamentally different assumptions. Burling's work on Burmese Numeral Classifiers represents an attempt to extend an essentially componential type analysis into a new domain of language. Beyond this, a considerable amount of data has been stated or at least provisionally sorted within frameworks that are neither componential nor taxonomic. The working assumptions of Friedrich's analysis of Russian pronouns depart from previous

semantic studies with respect to consideration of affect, social structure, and so forth. At this point almost every new domain suggests new techniques, new types of matrices and definitions, and so forth; it remains to be seen just how adequate the existing methodologies will prove as we enter further unexplored problems in semantic analysis.

III. Abstracts of Papers, Published and Unpublished

A. Burling

1. "Garo Kinship Terms and the Analysis of Meaning," Ethnology II: 70-85 (1963). (Burling). The kinship terms of Garo, a Tibeto-Burman language of eastern India are analyzed in a somewhat unconventional way. Many of the terms can be defined by the crosscutting dimensions of conventional componential analysis, but it is difficult (though perhaps not impossible) to account for them all in this way. Once these "core" terms are defined however, it becomes possible to define the remaining terms (and also to provide for some additional or "extended" meanings of the original terms) by the use of relative products. In this type of definition, the core terms are combined in various ways to define the other terms. By the use of such techniques all the terms of Garo can be adequately defined. An analogy is drawn between such techniques and the model of generative and transformational grammars which have recently been advocated by certain linguists. The analysis of the "core" terms is to some extent analogous to the presentation of kernel

sentences, while the extension of terms by the use of relative products, can be compared to transformations.

2. "Cognition and Componential Analysis: God's Truth or Hocus Pocus?" American Anthropologist 66: 20-28 (1964). (Burling). The logical possibilities for analyzing small sets of items according to componential analysis are considered and it is concluded that, taken in the abstract, even very small sets of terms may be analyzed in a very large number of ways. Although certain techniques may be useful in eliminating many of these possibilities, the danger of a considerable number of alternatives must be reckoned with. The implications of such a possibility are considered and it is concluded that so long as considerable numbers of alternatives exist it is unfair to assert that any particular analysis has some special claim to represent the cognitive reality to the speakers of the language.

3. "Burmese Kinship Terminology." (Burling). (To appear in a special issue of the American Anthropologist devoted to Componential Analysis, 1964). Burmese kinship terms are analyzed by two contrasting techniques, first according to conventional componential analysis, and second by making maximum use of relative product definitions. The two analyses differ strikingly in their appearance, although they are isomorphic in the sense that each contains all the information that the other contains, and given one of the analyses it would be possible to derive the other without recourse to additional data. The question of whether and by

what criteria either of these can be considered preferable is raised. The analysis by componential analysis might be considered more transparent and therefore in some sense "simpler" although this may simply be a function for the familiarity of the technique. It might also be considered preferable in that the analysis depends upon only one technique--componential analysis--while the second analysis requires certain primitive terms to be defined by componential analysis before the others are defined by relative products. On the other hand, the analysis by relative products is in certain cases closer to the way in which Burmese themselves describe their terminology, and one may suspect that it is closer to the way in which children learn their terminology. In the end the question of the relative value of the two analyses is left open.

4. "A Generative Sketch of Burmese." (Burling). (Multilithed). This paper is a translation of the only structural grammar of Burmese, Outline of the Burmese Grammar by William Cornyn, into a generative and transformational form. The exercise of converting a conventional grammar into the form advocated by many linguists today raised many interesting linguistic questions, but from the point of view of the present research its main interest is to lay the grammatical groundwork in a way that seems productive for the purposes of semantic analysis.

5. "How to Choose a Burmese Numeral Classifier." (To appear in a volume of papers now being edited by Melford Spiro).

Numeral classifiers form a grammatical class found in many languages, and among their interesting features is the difficulty in deciding whether it is best to treat the choice among classifiers as a semantic choice or a grammatical choice, that is whether the choice depends upon the extra-linguistic features of the objects to be counted, or upon the grammatical characteristics of the noun associated with the numbers. This paper considers this question in some detail, and the conclusion is drawn that at least in Burmese, the choice among classifiers is made on a semantic basis. The paper then goes on to list about 175 Burmese numeral classifiers, and to describe the circumstances under which they are used. Finally some consideration is given to the problem of the over-all semantic structure of the set of classifiers.

6. "Semantic Prerequisites to Grammatical Analysis." (Burling). (Typescript). This paper, still in preliminary form, considers an aspect of the relationship between meaning and grammar. Linguists have long held, somewhat dogmatically, that grammatical analysis must proceed without regard to semantic considerations. Taking a radically contrary view, this paper suggests that certain decisions which we feel to be syntactical, including even the assignment of morphemes to major form classes, is based in part upon the meaning of the terms. Examples from Tibeto-Burman languages are given of linguistic innovations in which new forms are assigned to form classes on the basis of their meaning.

B. Friedrich

1. First, "The Great Russian Mir as a Semantic Field." The signal importance of the village commune in Russian culture has long been recognized, and certain aspects of the institution have been carefully analyzed from the economists' and sociologists' points of view. Friedrich's goal, on the contrary, is to treat the commune as a semantic field, as a peasant code about their economic and social organization. This level of organization is then to be correlated with non-linguistic behavior in order to infer the logical premises that will generate both levels.

Reading and textual analysis covered ten articles and three books in Russian [Rússkaja Obshchina (The Russian Commune), by K. R. Kocharovskij (342 pages), Zémel'naja Obschchina Kubánskikh Kazakóv (The Agrarian Commune of the Kuban Cossaks), by F. Shcherbina (205 pages), and Ustój (The Foundations), by N. N. Zlatovratskij (514 pages)]. Several English language sources were also reviewed. Kocharovskij is the great, synthetic monograph on the Russian commune, based on scores of statistical, ethnographic and sociological studies of the various provinces, of which Shcherbina's work was probably the outstanding example.

2. Friedrich's article entitled, "Semantic Structure and Social Structure: An Instance from Russian," appeared in the spring of 1964 in Explorations in Cultural Anthropology (Essays in Honor of G. P. Murdock), edited by Ward H. Goodenough. The

article contains a sociological introduction to the Russian household, a formal-logical analysis of the kinship terminology, and a demonstration of the relation between the two semantic and the social structures in question. The article opens up many entirely new questions about the relations between Russian language and kinship, and constitutes perhaps the most adequate treatment to date of the logic and social implications of an extended affinal terminology.

3. The original model for the analysis of pronouns came from Roger Brown's brilliant article, "The Pronouns of Power and Solidarity" (in Style in Language, edited by T. Sebeok). A page-by-page inspection of literary prose, including nine novels and several short stories led to a theory of the psychological and cultural determinants of the selection of and vacillation between the pronouns ty and vy. In its framework, "The Structural Implications of Russian Pronominal Usage" differs from the others because, rather than laying bare the network of contrasts in a fairly large paradigm, it examines the multiplicity of contexts which are taken to define the meaning of two words of extremely high frequency and "functional load." The article (99 pages) is now in press with the Proceedings of the Los Angeles Conference on Socio-linguistics.

4. Completion of an article entitled "A Componential Analysis of the Old Russian Kinship Terminology," was a primary goal of the entire grant, as originally envisioned. But partly

because of problems of arbitrariness and "non-uniqueness" mentioned elsewhere in this report, a satisfactory solution and statement has had to await a great deal of collateral research on the larger social context and on the long-term evolution of the semantic field in question. The componential analysis was originally scheduled for the AA conference in San Francisco, but will now have to await publication elsewhere.

5-6. Friedrich's last contribution was first entitled "An Evolutionary Sketch of Russian Kinship," and appeared last year in the 1962 Proceedings of the American Ethnological Society, the revised version was originally scheduled for republication next year in a Reader on Kinship, edited by Eugene Hammel and Laura Nader (University of California, Berkeley). Since the Reader was abandoned because of the failure of the British to collaborate, Friedrich has decided to break it into two halves and submit it for publication to the Southwestern Journal of Anthropology.

The original paper was based on a review of the evidence for five distinct stages: Proto-Indo-European, Proto-Slavic, Old Russian, Modern Russian (1850), and Soviet Russian; the kinship terms and their usage were worked out independently for Proto-Indo-European and the two modern stages, whereas secondary sources were used for Proto-Slavic and Old Russian. Since the first publication Friedrich has read or re-studied dozens of articles and several books dealing with the five stages. Particularly helpful was the work by Ghurye on Indo-European, by Filin and Old

Russian, the Canon Law on reckoning kinship, and A. Meiendorf on the Russian household (Russkii Dvor). Nine other scholars have inspected the articles with special reference to their particular disciplines. As it now stands it may be the most carefully controlled structural statement of semantic change over a long evolutionary span.

IV. Conclusions

The research covered by our grant ranges along several dimensions. First, a mass of primary data was collected and sorted out, partly during Burling's interviews during the summer of 1962, but mainly in the course of Friedrich's survey of dictionaries, realistic novels, and articles or books of an ethnological or sociological order, all dealing with the nineteenth century Russian family and commune. At the second level, the number of Burmese or Russian domains that were provisionally or completely analyzed included the following: time, numeral classifiers, village economics, kinship, pronouns, and syntax. Third, the articles in question, particularly several already published by Burling, explored or treated in full a variety of theoretical topics, such as the relation of semantics to cognition, alternative analyses, and relative product analysis. In conclusion, both of the principal investigators criticized each others' papers from clearly contrasting if complementary points of view, but whereas Friedrich's work was consistently concerned with the details of Russian life, Burling's papers tended more toward logical and formal problems.